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Lisbon Strategy and Policies for the Information Society
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Use of Computers and the Internet in Schools in Europe 2006

Country Brief: Italy

6 / 2006

Key findings

Almost all Italian schools now use computers for teaching and have internet access. 69% use the internet via a broadband connection. With this figure Italy ranks at number 17 of the 27 countries participating in the survey. There is a large variation between school types: while only 63% of primary schools have a broadband internet connection, the penetration is highest among upper secondary schools (78%) and vocational schools (82%). There is also some variation with regard to broadband access between urban and rural areas: 78% of schools in densely populated areas have broadband access compared to 55% of schools in thinly populated areas.

Only 32% of the Italian schools using computers use them in classrooms Teachers in vocational schools use computers in class much more frequently than their colleagues in general education, with a very high 64% using computers in more than a quarter of their lessons as opposed to just 25% in primary schools.

Primary school teachers (a very high 62%) seem to be less ICT competent than those in upper secondary (51%) and vocational schools (50%).

Only 2% of all, and 5% of Italian teachers not using ICT, are not convinced of any benefits of using computers in class which is a very good result, significantly below the European average of 16%. It is even better in Italian primary schools with less than 3% of teachers expressing this attitude.

A rather high 13% express the opinion that teachers lack the necessary interest in using ICT which is the third highest figure in Europe. It appears that (policy) activities are required in the area of motivation for ICT use in Italian schools. Awareness-raising campaigns to raise the interest of Italian teachers might become an appropriate policy measure to counter the current situation.

Lack of ICT equipment and access to the internet do not seem to be a major barrier in Italian schools since "lack of equipment in school" is expressed by just 8% of all Italian teachers.

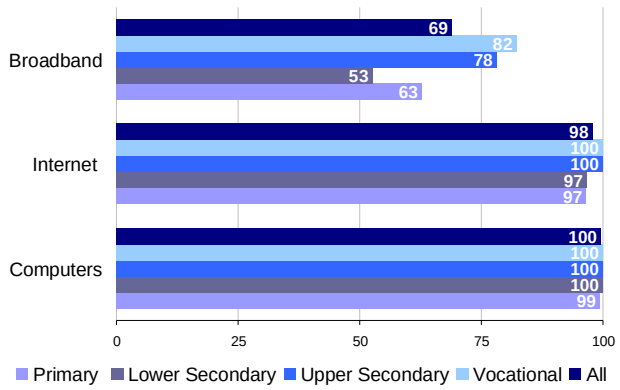
Italian teachers are positive towards the different purposes for ICT use in teaching but achieve figures below the European average on attitudes that ICT should be used for letting pupils do exercises and practise (a very low 59% compared to a European average of 80%), letting pupils retrieve information in a self-directed manner (69%) and for collaborative and productive work by pupils (79%). There are only minor differences across school types.

ICT Equipment and Internet in Schools

Almost all Italian schools now use computers for teaching and have internet access. 69% use the internet via a broadband connection. With this figure Italy ranks at number 17 of the 27 countries participating in the survey. There is a large variation between school types: while only 63% of primary schools have a broadband internet connection, the penetration is highest among upper secondary schools (78%) and vocational schools (82%). There is also some variation with regard to broadband access between urban and rural areas: 78% of schools in densely populated areas have broadband access compared to 55% of schools in thinly populated areas.

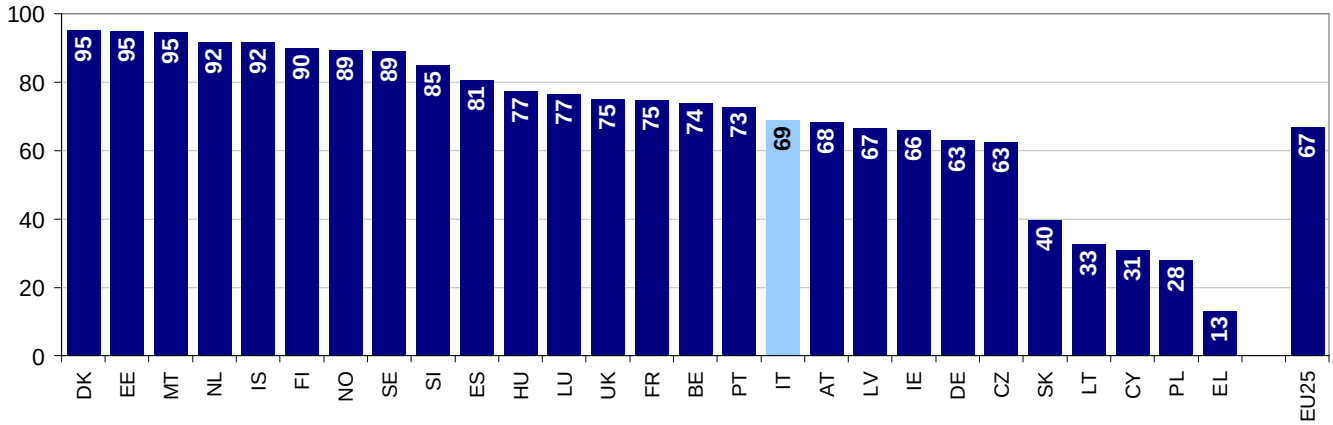
A rather high 73% of schools have a website, 66% offer e-mail to teachers but only 11% do so to pupils Only 32% of the Italian schools using computers for teaching use them in classrooms with the highest percentage being achieved in primary schools (but again only 38%). Computers in the school library are more or less restricted to upper secondary and vocational schools.

Percentage of Schools Using Computers, Internet Connection, and Broadband Internet Access According to School Type in Italy 2006



Source: *LearnInd HTS 2006;* ***Base:*** *All schools;* ***Question:*** *Computers: Q6; Internet, Broadband: Q9. See questionnaire for exact wording.*

Percentage of Schools with Broadband Internet Access in Europe 2006



Source: *LearnInd HTS 2006;* ***Base:*** *All schools;* ***Question:*** *Q9. See questionnaire for exact wording.*

Those schools with a broadband connection to the internet are much more likely to have a more sophisticated ICT infrastructure including a school website, the use of a LAN or the availability of an intranet.

The use of Computers and the Internet in Schools

Computers are used for various purposes and as part of teaching different subjects in schools but also and very widely as a separate subject.

Computer sciences are taught as a separate subject in 50% of Italian schools with lower secondary schools ranking top (64%) and primary schools at the bottom (48%) according to the statements made by Italian head teachers.

72% of Italian classroom teachers had used computers in class in the 12 months prior to the survey, with little variation across school types and between urban and rural areas. For most teachers, this includes not only using a computer for presentation purposes but also the use of computers by pupils in class.

A third of the teachers using computers use them in less than 10% of all lessons. 15% state that they use computers in more than half of their lessons. These figures are slightly below the European average.

Teachers in vocational schools use computers in class much more frequently than their colleagues in general education with a very high 64% using computers in more than a quarter of their lessons as opposed to just 25% in primary schools.

Italian teachers using computers do not restrict themselves to a particular source of information but use a multitude of different material from a variety of sources for teaching purposes which in most categories is below the European average.

The learning material that is used most by Italian teachers includes offline learning materials such as CD-ROMs. This applies to 83% of teachers. Only 59% of teachers use prefabricated pedagogical material from existing online sources and 56% material that is made available on the schools' network and databases.

ICT equipment in Italian schools 2006

			Educational Level (IT)				Type of locality (IT)			Internet Access (IT)	
	Total IT	Total EU25	Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated	Narrow-band	Broadband
Computers per 100 pupils [a]	8.0	11.3	5.7	6.9	10.7	12.4	8.2	7.6	8.1	7.6	8.2
... of which internet connected	6.5	9.9	4.2	5.1	9.8	10.5	6.8	6.3	6.4	6.0	6.8
Percentage of schools having...											
Computers for teaching [b]	99.6	98.7	99.4	100.0	100.0	100.0	98.9	100.0	100.0	100.0	100.0
Internet access [c]	97.8	96.2	96.5	96.7	100.0	100.0	96.9	98.0	98.9	100.0	100.0
Broadband internet access [d]	69.0	66.9	62.8	52.6	78.2	82.2	78.2	69.2	54.5	0.0	100.0
A website [e]	72.6	63.0	65.2	58.9	88.3	89.2	74.1	75.6	65.3	63.9	78.6
An e-mail address for the majority of teachers [f]	66.3	65.2	66.3	67.0	63.2	59.0	61.7	68.1	70.3	71.1	66.4
An e-mail address for the majority of pupils [g]	11.3	23.5	6.8	10.0	20.6	14.7	10.5	12.1	11.4	7.4	13.3
A LAN [h]	34.5	55.2	27.9	28.8	53.9	51.8	34.2	38.5	28.3	28.9	38.0
An intranet [i]	67.9	40.8	64.8	66.5	74.0	70.3	73.0	66.7	62.3	66.6	70.6
An external support or maintenance contract [j]	53.2	47.1	52.8	44.7	61.8	50.0	56.9	51.5	50.4	51.7	55.5
Percentage of schools using computers for education in...											
Computer labs [k]	98.8	80.5	98.4	100.0	99.0	100.0	98.9	100.0	96.6	99.1	98.6
Classrooms [l]	32.2	61.4	38.3	34.9	20.8	19.1	34.5	30.1	32.3	30.8	32.8
School library [m]	24.7	33.4	16.8	22.9	45.6	37.0	26.1	28.0	17.2	17.9	28.3
Other locations accessible for pupils [n]	35.6	27.0	28.5	41.9	57.8	42.4	35.4	37.9	31.9	32.3	37.1

Source: *LearnInd HTS 2006;* ***Base:*** *a: all pupils; b-j: all schools, k-n: schools using computers for educational purposes for pupils (cf. index b);* ***Question:*** *a: Q4, Q6, Q7; b: Q6; c: Q9; d: Q9; e-j: Q12; k-n: Q8. See questionnaire for exact wording.*

Use of computers in class in Italy 2006

Assessments of the head teacher		Total IT	Total EU25	Educational Level (IT)				Type of locality (IT)			Internet Access (IT)	
				Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated	Narrow-band	Broadband
Computer sciences taught as separate subject	Agree	50.3	54.7	48.2	64.0	54.2	52.3	48.4	44.9	62.3	50.4	50.1
	Disagree	48.5	43.7	50.5	35.3	44.8	46.3	50.5	53.7	36.8	48.6	48.6
	Don't know	1.2	1.6	1.2	0.8	1.0	1.4	1.0	1.5	0.9	1.0	1.3
Computers and the internet are												
integrated into teaching of most subjects	Agree	82.2	75.3	82.0	71.3	82.0	93.2	84.5	85.7	73.1	83.6	81.8
	Disagree	17.4	24.1	17.7	27.8	18.0	5.8	15.5	13.9	26.3	15.6	18.0
	Don't know	0.3	0.6	0.3	0.8	0.0	1.0	0.0	0.5	0.6	0.8	0.2
used for teaching traditional subjects or basic skills	Agree	76.3	75.8	80.8	74.0	66.3	69.3	75.5	78.0	74.6	73.0	77.3
	Disagree	22.4	22.8	18.0	25.1	31.8	30.0	23.4	20.0	25.0	27.0	20.8
	Don't know	1.3	1.4	1.3	0.9	1.9	0.7	1.1	1.9	0.4	0.0	1.8
used for teaching foreign languages	Agree	79.8	56.6	79.7	70.6	82.8	86.3	80.8	82.8	73.4	78.0	80.3
	Disagree	19.3	40.1	19.3	28.5	16.3	12.8	18.7	15.9	25.8	21.4	18.6
	Don't know	0.9	3.3	1.0	0.9	1.0	1.0	0.5	1.3	0.8	0.7	1.1
used for coping with students with special needs/ handicaps	Agree	91.7	71.7	95.0	92.0	78.5	96.6	92.1	93.2	88.5	89.5	92.9
	Disagree	6.7	23.7	4.1	5.3	17.3	3.4	5.6	5.9	9.8	9.1	5.6
	Don't know	1.6	4.6	1.0	2.7	4.2	0.0	2.3	1.0	1.7	1.4	1.5

Source: *LearnInd HTS 2006;* ***Base:*** *All schools using computers for educational purposes for pupils;* ***Question:*** *Q13: "To what extent do you agree or disagree with the following statements regarding the educational use of computers and/or the internet in your school?"*

The older the teachers (indicator used here: years of teaching experience), the less use they make of computers and the internet in schools. This applies to those teachers using ICT in more than half of their lessons. 44% of those with more than 20 years of teaching experience use ICT in class compared to 54% of those with less than five years teaching experience. The situation is the other way round among teachers using it in less than a quarter of their lessons.

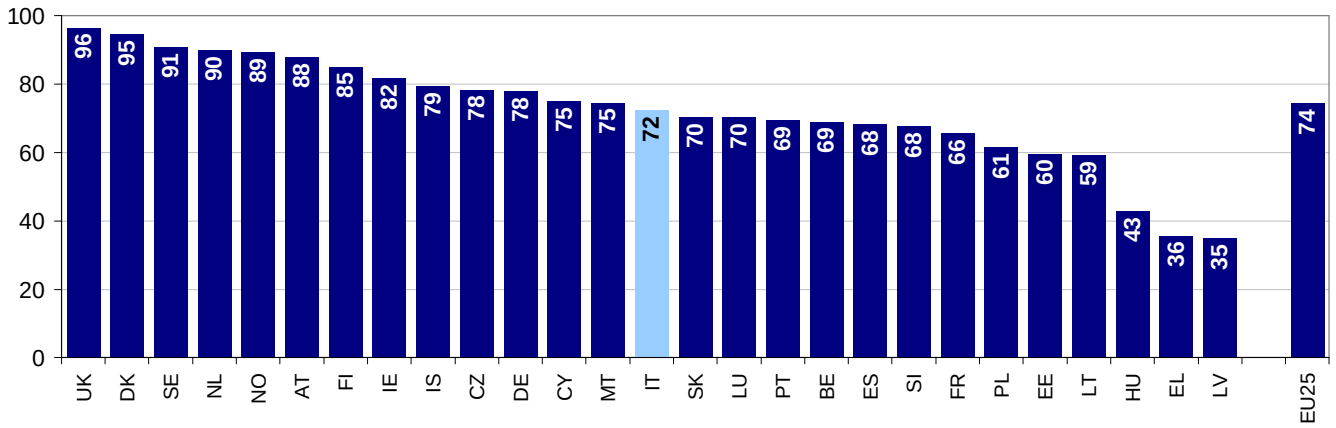
28% of teachers in Italy still do not use computers in class. When asked for the most important barrier, 31% state a lack of computers in their schools as an important barrier.

Only 5% of Italian teachers not using ICT are not convinced of any benefits of using computers in class which is a very good result, significantly below the European average of 16%. It is even better in Italian primary schools, with less than 3% of teachers expressing this attitude.

A rather high 13% express the opinion that teachers lack the necessary interest in using ICT which is the third highest figure in Europe. It appears that (policy) activities are urgently required in the area of motivation for ICT use in Italian schools. Awareness raising campaigns to raise the interest of Italian teachers might become an appropriate policy measure to counter the current situation.

Lack of ICT equipment and access to the internet do not seem to be a major barrier in Italian schools since "lack of equipment in school" is expressed by just 8% of all Italian teachers (27% non-users multiplied with 31% of teachers agreeing to this item).

Percentage of teachers who have used computers in class in the last 12 months (2006)



Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7. See questionnaire for exact wording*

Teachers' use of computers in class in Italy 2006

Percentage of teachers who ...	Total IT	Total EU25	Educational Level (IT)				Type of locality (IT)			Years of teaching experience (IT)			
			Primary	Lower secon-dary	Upper secon-dary	Voca-tional	Densely popu-lated	Inter-mediate	Thinly popu-lated	<5 y	5-9 y	10-19 y	20+ y
...have used computers in class[1]	72.4	74.3	71.6	71.9	72.4	81.6	71.9	73.3	71.5	*59.6**	65.6	73.9	73.0
...use a computer in class to present or demonstrate	58.6	63.4	58.7	56.9	56.8	60.2	55.9	58.1	63.4	*59.6**	56.7	63.0	57.4
...have pupils use a computer in class	66.8	66.3	66.5	66.6	64.2	76.6	66.7	67.9	65.1	*53.1**	62.9	68.8	67.0

Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7 "How have you used computers and/or the internet for work in the last 12 months?"*

Frequency of computers use in class Italy 2006

Percentage of all teachers *using computers in class* who ...	Total IT	Total EU25	Educational Level (IT)				Type of locality (IT)			Years of teaching experience (IT)			
			Primary	Lower secon-dary	Upper secon-dary	Voca-tional	Densely popu-lated	Inter-mediate	Thinly popu-lated	<5 y	5-9 y	10-19 y	20+ y
...use computers in 5% and less of all lessons	13.8	18.5	17.7	10.1	7.2	6.8	12.1	13.5	17.0	*21.8***	*12.9**	16.2	13.0
in 6 to 10% of lessons	18.8	22.5	22.5	13.4	15.7	12.7	17.7	19.2	19.6	*0.0***	*16.7**	17.8	19.7
in 11 to 24% of lessons	24.3	22.2	24.8	26.8	22.5	17.0	24.8	25.4	21.7	*24.9***	*24.4**	25.1	24.1
in 25 to 50% of lessons	28.0	20.2	24.9	36.3	33.0	35.6	30.2	26.5	27.3	*42.8***	*30.7**	27.3	27.7
more than 50% of lessons	15.1	16.5	10.1	13.4	21.6	27.9	15.2	15.5	14.4	*10.5***	*15.3**	13.6	15.6

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class, "don't know" answers excluded;* ***Question:*** *Q9 "For what percentage of time have you used computers and/or the internet in class when teaching your main subject(s) in the past 12 months?"* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases; "xx.x** " based on less than 10 cases.*

Source of educational material used in class in Italy 2006

Percentage of all teachers *using computers in class*[2] who ...	Total IT	Total EU25	Educational Level				Type of locality		
			Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
...use material they have searched the internet for	66.8	82.7	63.7	70.7	70.6	70.8	70.9	66.3	61.2
...use existing online material from established educational sources	59.2	74.2	62.4	57.7	64.1	57.7	60.4	62.7	51.5
...use material that is available on the school's computer network or database	55.9	63.1	56.0	50.4	59.8	58.9	57.4	60.2	46.1
...use electronic offline material (such as CD ROMS)	82.7	83.0	84.6	82.3	81.0	85.6	83.0	83.3	81.3
...use other learning material when using computers in class	2.5	8.8	1.5	1.6	4.9	0.8	1.6	3.6	2.0

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class;* ***Question:*** *Q10 "Which of the following types of materials have you used when teaching your main subject(s) with the aid of a computer and/or the internet?"*

Barriers to computer use in class in Italy 2006

Percentage of all teachers ***not*** *using computers in class*	Total IT	Total EU25	Educational Level				Type of locality		
			Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
Lack of computers	30.8	48.8	30.4	27.2	40.4	*32.4**	29.3	35.0	26.6
Lack of adequate con-tent/material	16.7	20.3	16.5	19.6	10.6	*15.7**	16.3	15.7	18.9
Lack of content in national language	6.7	8.6	7.5	9.8	6.7	*2.2**	6.1	6.0	8.7
Lack of adequate skills of teachers	16.3	22.5	19.8	16.4	8.0	*11.9**	14.4	16.2	19.3
No or unclear benefits	5.4	16.2	2.5	9.4	6.7	*5.3**	4.8	4.0	8.4
Lack of interest of teach-ers	12.6	8.9	12.3	12.3	15.0	*5.3**	12.1	14.9	9.8
Subject does not lend itself to being taught via computers	16.8	24.4	16.7	9.6	17.3	*27.3**	19.1	15.2	15.9
Other	6.7	21.3	8.3	6.8	3.5	*0.0**	7.1	7.1	5.4

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers not using computers in class;* ***Question:*** *Q12: "Why do you not use computers and/or the internet when teaching in class?"* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases.*

Comparison of the situation in 2001 and 2006[3]

In Italy the percentage of schools using computers for educational purposes has risen over the past 5 years from an already high 94% in 2001 to 100% in 2006.

While in 2001 one hundred pupils had to share 6 computers the figure rose to 8 by 2006, an improvement of around 30% but still rather strongly at a level below the European average of 12.

Schools have moved over to broadband. 67% (EU25: 45%) of the schools in Italy are connected to the internet via a DSL connection in 2006. The figure for 2001 was just 3% (EU15: 5%). The figures have increased strongly over the past 5 years.

Schools have also partially increased the quality of ICT use: while in 2001 37% (EU15: 44%) of the schools in Italy had their own website, the figure is now 73% (EU25: 62%).

Attitudes on the Usefulness of ICT use in Teaching in Italy 2006

Percentage of teachers saying computers/internet should be used for …	Total IT	Total EU25	Educational Level				Type of locality		
			Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
Letting pupils do exercises and practise	59.3	79.9	58.1	54.7	63.4	65.0	58.5	60.8	58.2
Letting pupils retrieve information in a self-directed manner	69.3	85.0	69.2	73.6	65.7	76.2	69.4	69.7	68.6
Teaching about office tools	24.5	61.3	19.3	27.5	26.8	43.6	25.2	25.3	22.3
Collaborative and productive work by pupils	78.6	80.5	80.2	85.5	76.0	77.4	82.4	75.7	77.9
Computer/internet should not be used for any of these in teaching	0.7	0.6	0.5	0.0	1.7	0.2	0.6	1.2	0.1

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers;* ***Question:*** *Q13: "What do you think for what computers and the internet should be used for in teaching?"*

Teachers' access, competence and motivation for using ICT in class 2006

Percentage of teachers agreeing or strongly agreeing:	Total IT	Total EU25	Educational Level				Subject of teaching					
			Primary	Lower secondary	Upper secondary	Vocational	General primary	Literature and languages	Humanities and social sciences	Science, maths, computer sciences	Physical, artistic, crafts education	Vocational education
Access												
Our school is well equipped with computers [a]	71.9	74.2	62.9	75.8	87.0	93.0	64.3	69.7	74.1	71.7	*77.4**	86.6
The internet connection we have is sufficiently fast [b]	70.4	77.2	59.7	71.3	87.0	85.0	61.2	66.6	68.6	71.7	*79.9**	85.9
Better technical maintenance and support is required in our school [c]	66.6	64.8	70.9	70.1	56.4	57.4	67.1	75.3	69.3	64.2	*60.5**	51.3
Existing teaching materials on the Internet are of poor quality [d]	30.8	29.9	28.7	32.5	36.5	39.5	34.8	31.5	30.7	24.2	*41.1**	37.6
It is hard to find adequate learning materials for teaching [e]	42.6	38.7	38.9	41.5	47.5	52.1	38.0	40.4	46.6	40.1	*45.3**	60.1
Motivation												
Pupils are more motivated and attentive when computers and the internet are used in class [f]	89.1	86.3	90.5	88.2	85.4	90.1	88.2	90.3	89.8	88.0	*92.3**	91.3
Using computers in class does not have significant learning benefits for pupils [g]	13.0	20.7	11.8	13.0	13.6	18.5	13.0	12.1	15.3	11.9	*2.9**	20.8
Competence												
Teachers in our school do not have sufficient computer skills [h]	58.4	42.0	62.0	62.9	51.2	50.4	60.7	62.8	55.2	60.0	*49.5**	37.4
Competence / computer skills (Percentage of teachers who feel very confident at…)												
Using text processors [i]	50.3	65.0	45.5	53.6	57.1	64.5	47.1	41.4	53.2	50.9	*61.9**	60.8
Creating electronic presentations [j]	43.1	34.0	39.4	42.0	50.2	56.8	39.9	35.0	35.5	48.4	*47.1**	58.8
Using e-mail [k]	37.1	65.9	31.2	38.3	56.3	47.4	29.8	33.2	36.3	40.4	*39.7**	48.9
Downloading and installing software [l]	21.4	35.8	18.4	18.7	31.3	33.0	18.6	16.0	27.7	25.2	*23.5**	17.7

Source: *LearnInd CTS 2006;* ***Base:*** *a-h All teachers; i -l Teachers using computers in class* ***Question:*** *a-h Q14, i-l Q11.* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases.*

Attitudes on the Usefulness of ICT use in Teaching

Computers and the internet have arrived in Italian schools and their use is steadily improving. The share of teachers in Italy – but also in the European Union in general – who believe that computers and the internet should not at all be used in school is very low and below 1%.

Italian teachers have positive attitudes about the different applications for ICT in teaching but achieve figures below the European average on attitudes that ICT should

be used for letting pupils do exercises and practise (a very low 59% compared to a European average of 80%), letting pupils retrieve information in a self-directed manner (69%) and for collaborative and productive work by pupils (79%). There are only little differences across school types.

Only a minority of Italian teachers (25%) believes that teaching about office tools should be an integral part of the teaching process. With this figure, the country ranks at the very bottom of European countries (rank 26). This attitude is most prominent among teachers in vocational schools (44%) and least prominent in primary schools (19%). It is interesting that there is no common pattern across the European countries. In some countries (e.g. the UK, Norway, Iceland, Cyprus but also Spain) teachers in primary schools express this opinion much more strongly and to a larger extent compared to higher-level schools.

Access, Competence and Motivation for Using ICT and the Internet in Schools

Access

A majority of Italian teachers are more or less satisfied with the technical access means at their schools: 72% state that their school is well equipped with computers and 70% express the opinion that their internet connection is fast enough. However, 67% wish there were better support and maintenance actions taken. In terms of content 43% state problems with respect to finding adequate learning materials and argue that existing material are of poor quality.

Competence in using ICT

Italian teachers feel most competent in using a text processor programme and with using presentation software packages but they are less confident with using e-mail and downloading and installing software. Primary school teachers (a very high 62%) seem to be less ICT competent than those in upper secondary (51%) and vocational schools (50%).

Motivation for ICT use in Schools

89% of Italian teachers see significant learning benefits for pupils using computers in class and say that pupils are more motivated and attentive when computers and the internet are used in class.

ICT Readiness of Teachers – the ACM Model

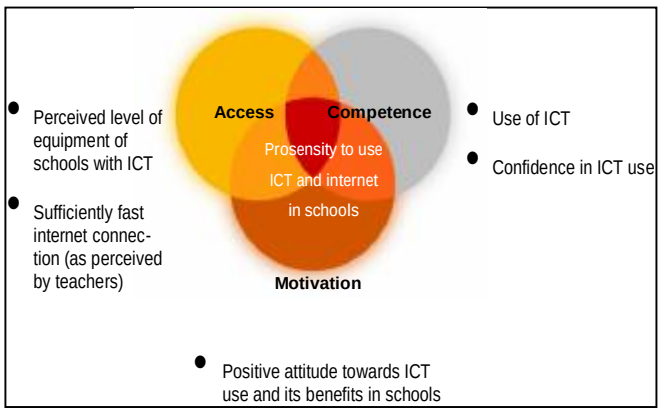
The ACM model as developed by Viherä and Nurmela (2001)[4] was applied in LearnInd to generate a typology according to the "propensity to the use of computers and internet by teachers in classroom situations at schools".

The typology in the figure below takes account of the three main categories of preconditions which need to be given for a school to make use of computers and the internet in the teaching process in classrooms, computer labs etc.

These are: access (to computers and the internet at school), competence (in using the computer software and the internet, and applying it for teaching purposes), and motivation (gauged through the attitude that using computers in classrooms results in significant learning benefits).

Any attempt to group the classroom teachers according to their propensity to becoming users of computers and the internet in their teaching processes needs to take account of these three dimensions. In the present application of the ACM model data from the Classroom Teacher Survey (CTS) was used. Therefore "access" for instance is to be understood as a perceived level of computer equipment at schools and teachers" satisfaction therewith rather than an objective measure of equipment status.

The Access-Competence-Motivation Model



38% of European teachers dispose of sufficient access to the internet at school, the necessary competence in using ICT in class and are motivated to its use. With 34% of the teachers belonging to this group, Italy ranks at 13th which places the country just in the top half of European countries. Overall the UK with 60% ranks top and Latvia with 15% finds itself at the very end.

The as yet insufficient internet connection in many schools and a lack of motivation of teachers for using ICT are the most critical issues for a wider uptake of computers and the internet in schools in Europe. 20% of European teachers indicate insufficient computer equipment and the low speed of internet connection at their school as key barriers. 14% show a lack of motivation, i.e., they are of the opinion that using computers in class does not result in significant learning benefits.

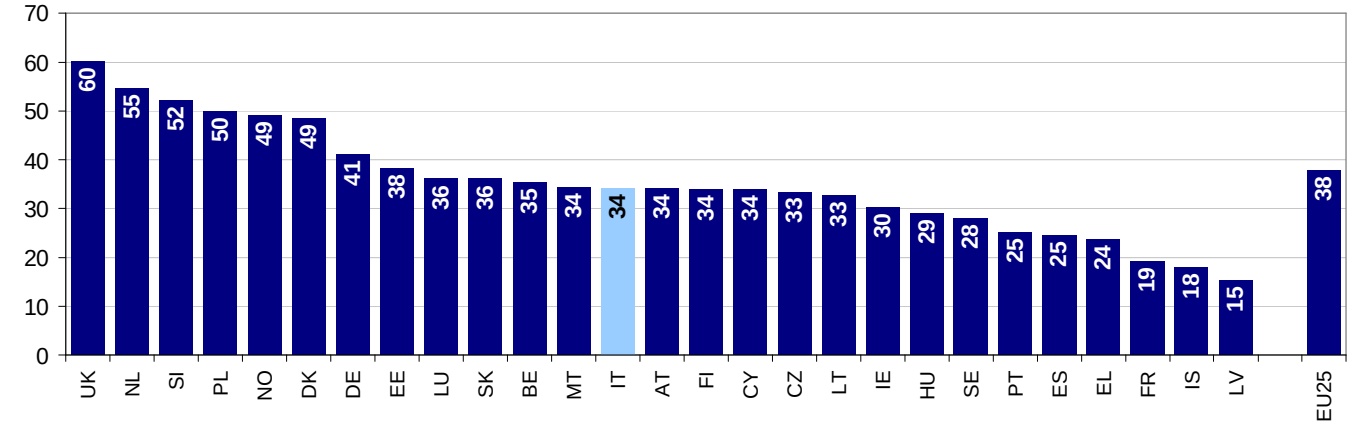
The situation in Italy is somewhat different. Here more than 28% as opposed to 21% at EU25 level claim that the ICT equipment in school is sub-optimal but only 8% seem to come up with an insufficient motivation for ICT use. The corresponding figure for the EU25 is almost twice as high.

Access, Motivation and Competence of Teachers for Using ICT in Schools in Italy 2006

IT	EU25	Access	Competence	Motivation
4.3	4.3	~~Access~~	~~Competence~~	~~Motivation~~
3.4	3.9	**Access**	~~Competence~~	~~Motivation~~
6.8	9.7	~~Access~~	**Competence**	~~Motivation~~
8.5	5.0	~~Access~~	~~Competence~~	**Motivation**
8.1	13.7	**Access**	**Competence**	~~Motivation~~
6.5	4.8	**Access**	~~Competence~~	**Motivation**
28.4	20.7	~~Access~~	**Competence**	**Motivation**
34.2	37.9	**Access**	**Competence**	**Motivation**
100	100			

Percentage of teachers. ***Source:*** *LeanInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *See endnote* [5]

ICT Readiness of Teachers in Italy: Percentage of Teachers Fully Ready to use Computers in Class (ACM Indicator) 2006



Source: *LeanInd CTS 2006;* ***Base:*** *All teachers.* ***Question:*** *See endnote 5*

ANNEXES

Methodology Report

Universe / Sample population

In order to assure the comparability of school levels in all countries UIS-OECD-EUROSTAT "Mapping of national education programmes to ISCED 97 for school academic/year 2002/2003" [6] was used for composing the sample frame. Based on this, each country divided its school system into ICSED codes and made different combinations that existed in its country.

Sampling frame and method

The sample was composed using official databases, which contained contact data of schools. In the majority of countries the sample was drawn from a database received from the Ministry of Education.

For each country a separate template of sample frames was composed by TNS Emor. These templates contained data about school types across regions as well as location type. School types were defined based on the ISCED codes provided in UIS-OECD-EUROSTAT. Location type distribution was made according to the Eurostat type of locality classification which differentiates densely populated, intermediate and thinly populated municipalities[7]. Apart from that, each country was divided into 3-7 regions depending on the size of a country.

Based on the data provided by countries, TNS Emor composed quotas for each country. Two level stratification was used – quotas for first stage, random sample for second. The quotation for region by school type and location type was endorsed. Simple random selection was conducted by the local agency or the local source of the contact base. Both private and public schools were included in the sample. It was also obligatory to include schools of other teaching languages than the official language of a country in the sample.

Simple random sampling was used inside a quota cell. This means that if the quota for primary schools in region1 was 100 and the total number of primary school in this region was 800, then a random sample selection was be made among those 800 schools. This covered also both private and public schools and schools of other teaching languages than the official language of a country.

No more than 50% of interviews could be made in one school level. At least 10% of respondents had to be from schools which provided professional/vocational or combined programme of vocational and upper secondary level education (in case a country did not have special quota for those schools). It did not matter whether vocational education level was coded as ISCED 3 or ISCED 4.

There were no duplications in samples of head teacher and classroom teacher surveys. This was only allowed in countries with small universe sizes (e.g. Malta, Cyprus, Iceland, Estonia, Latvia etc) and in cases where the last quota cells were very difficult to achieve or there were not enough schools of a certain type. The priority was to include as many different schools as possible. In both surveys, 5 attempts were made before giving up and only if the respondent refused was this person not contacted again.

The CATI programme generated a randomly chosen letter. The interviewer asked for the person with a surname that started on the generated letter. If there was more than one teacher whose surname started with the selected letter, the person who was first alphabetically was chosen. If the correct person was not available, an appointment was made. At least 5 attempts were made, before taking another teacher.

Only in Malta, due to instructions dictated by the Education Department, would the Head Teacher randomly select a teacher that would be available for an appointment during which they would be interviewed.

Number of interviews conducted (HTS / CTS)

Country		Head Teachers	Classroom teachers
BE	Belgium	450	807
CZ	Czech Republic	500	1000
DK	Denmark	315	848
DE	Germany	450	901
EE	Estonia	400	851
EL	Greece	500	1000
ES	Spain	518	1022
FR	France	501	869
IE	Ireland	403	626
IT	Italy	500	900
CY	Cyprus	150	600
LV	Latvia	451	902
LT	Lithuania	457	908
LU	Luxemburg	82	277
HU	Hungary	500	1000
MT	Malta	100	200
NL	Netherlands	515	890
AT	Austria	320	450
PL	Poland	500	1000
PT	Portugal	450	900
SI	Slovenia	253	460
SK	Slovakia	502	1000
FI	Finland	318	601
SE	Sweden	200	450
UK	United Kingdom	450	905
IS	Iceland	177	424
NO	Norway	494	708
TOTAL		**10456**	**20499**

Fieldwork

Fieldwork was coordinated by the TNS Emor and conducted in cooperation with its local TNS offices excluding Iceland, Cyprus, Austria, Slovenia and Malta where TNS does not have offices. In these countries partners with whom TNS had previous experience were used.

Pilot interviews prior to the regular fieldwork were conducted with 20 schools in both target groups in Estonia and Greece in February 2006, in order to test the questionnaire (structure, comprehensibility of questions).

Between March and April 2006, surveys among head teachers (head teacher survey - HTS) and classroom teachers (CTS) were carried out in 27 countries of Europe. TNS Emor was responsible for the fieldwork.

Weighting schemes

After the fieldwork, weighting coefficients were computed using region, location type and school type.

Statistical accuracy of the survey: confidence intervals

Statistics vary in their accuracy, depending on the kind of data and sources. A "confidence interval" is a measure that helps to assess the accuracy that can be expected from data. The confidence interval is the estimated range of values on a certain level of probability of error. Confidence intervals for estimates of a population fraction (percentages) depend on the sample size, the probability of error, and the survey result (value of the percentage) itself. Further to this, variance of the weighting factors has negative effects on confidence intervals.

The calculation of confidence intervals is based on the assumption of (quasi-) infinite population universes. In practice, however, in some countries and for some school levels the complete population of schools consists of only several hundred or even a few dozen of schools. In some cases, literally each and every school within a country-school type cell was contacted and asked to participate in the survey. This means that it is practically impossible to achieve a higher confidence interval through representative school surveys in which participation is not obligatory.

Country Background Data

Country Background Data

Italy belongs to the group of largest countries in Europe. It has the highest life expectancy compared to other European countries, the lowest fertility rate and a population growth rate next to 0%. Only 14% of the population are aged 14 and under, which is the European minimum. With a pupil/teacher ratio of 11 pupils per teacher, Italy is amongst the best performers in Europe on this indicator.

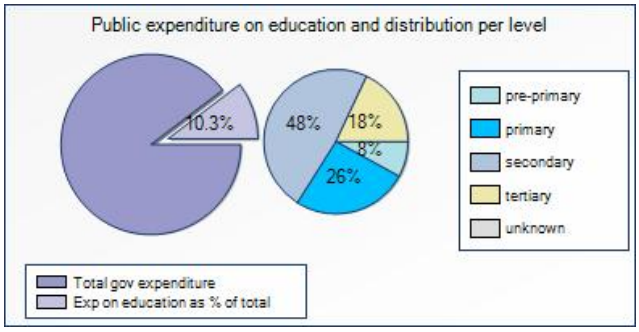
General Population Data for Italy 2002/03[8]

Total population (000)	57,482
Annual population growth rate (%)*	0
Population 0-14 years (%)	14
Rural population (%)*	33
Total fertility rate (births per woman) *	1.3
Infant mortality rate (0/00) *	4
Life expectancy at birth (years) *	80
GDP per capita (PPP) US$ *	26,460
GDP growth rate (%)*	0.4
* World Bank World Development Indicators	

Resources for Education in Italy 2002/03

Pupil / teacher ratio (primary)	11
Public expenditure on education :	
as % of GDP	4.7
as % of total government expenditure	10.3
Distribution of public expenditure per level (%):	
pre-primary	8
Primary	26
secondary	48
tertiary	18
unknown	

Resources for Education in Italy 2002/03



The Educational System in Italy[9]

In school year 2003-2004, there were 8,851,235 students of all school levels; 18.6% (1,643,713 pupils) at pre-school level, 31.3% (2,768,386 pupils) at primary level, 20.4% (1,805,001 pupils) at lower secondary level and 29.7% (2,634,135 students) at upper secondary level. In academic year 2003-2004, students enrolled in universities were 337,000. The language of instruction is Italian, although in some areas the use of the local language is officially authorised for education.

Overall responsibility lies within the Ministry of Education, University and Research (*Ministero dell'Istruzione, dell'Università e della Ricerca* – MIUR). The Ministry of Education, University and Research is represented at local level by regional and provincial education offices. Regions may delegate certain responsibilities to the provinces and municipalities. From school year 2000/2001, all the schools have autonomy in the fields of administration, organisation, pedagogy, research, experimentation, and development. The reorganisation of the Ministry of Education, University and Research and the decentralisation of administrative and management responsibilities from the State to territorial and local authorities (regions, provinces and municipalities) aim to enhance efficiency of both the central (Ministry of Education) and peripheral components – regional school administrations and provincial education directorates *(Uffici scolastici regionali)* – of the school administration more efficient and incisive.

The approval of the bill concerning the equal status of State and State-recognised schools *(scuole paritarie)* (March 2000) aims at providing measures to support parents of children and school-aged young people regardless of whether they are enrolled in a State school or attend a State-recognised institution in order to ensure the right to education and promote the expansion, diversification and integration of education delivered within the public education and training system.

The *Servizio Nazionale di Valutazione* of the education and training system was set up in 2004 to evaluate the efficiency and quality of the education system at national level. At higher education level, the private sector comprises university institutions, promoted and managed by bodies and private citizens, authorised by the Ministry of Education, University and Research to issue academic qualifications equivalent to state qualifications.

Universities have gained autonomy in different stages. The first one dealt with administrative, financial and accounting aspects. Since 1994, the public state and private university institutions have had their own budgets. The tasks of the Ministry are the allocation of funds, monitoring and evaluation.

According to university autonomy, each university establishes its courses' organisation in respect of the qualifying formative objectives of the courses. Each university decides on the teaching organisation and structure of its degree courses according to the teaching regulations which are issued by rectoral decree and approved by the Ministry.

The use of ICT in Education[10]

The Italian Ministry of Education, University and Research (MIUR) is working intensely to strengthen the Development Programme for Educational Technologies, which involves the whole school system, from pre-school to upper secondary education.

As a core element in the Education Reform Act released in 2003, access to ICT will be improved throughout the whole educational sector. Setting up a computerised network infrastructure with broadband cabling and satellite reception equipment in schools is a prerequisite for increasing access to new technologies.

The implementation of a computerised network is also supportive for teaching Computer science, which is a new core element in the curriculum starting from the first year of primary school. In the course of a programme for continuous ICT training of school staff, teachers have the opportunity to learn through an integrated system of classroom activity and tutored self-directed learning.

The Study

There is a lack of information on the actual use of ICT for learning in schools, and for supporting political action in potential future programmes. It is necessary to clarify matters such as the educational vision of heads of schools, the current impact of ICTs on teachers' practice, support and training and on other factors for success in e-learning.

The objective of the study is to obtain estimates for the eEurope 2005 indicator on e-learning "number of pupils per computer with Internet connection (broadband/non-broadband)" and relate it to other possible indicators of educational use of ICT in compulsory education (e-learning in schools). The study looks at how Information and Communication Technologies (ICT) are used in schools.

The study is a continuation of the earlier benchmarking exercise for eEurope 2002.

It involved two surveys. Firstly of head teachers to obtain information on the schools and then of teachers to focus on their use of ICTs in the teaching process

This exercise is part of the Information Society monitoring and benchmarking process for which the Commission in cooperation with the Council defined benchmarking indicators.

Country Briefs

This document has been prepared by **empirica** based on own desk research and the above mentioned primary data sources: Head Teacher Survey (HTS) 2006 and Classroom Teacher Survey (CTS) 2006 in the EU25 member states, Iceland and Norway.

Altogether 27 LearnInd Country Briefs are available in a common format, one for each member of the enlarged European Union, Norway and Iceland.

Also a final report has been developed. It includes approximately 100 exhibits, more than 250 data tables and a report about the key results.

You can access and download these documents in PDF format (for free) from http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm.

More information

Check our results and achievements on: http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm. If you wish to be provided with more details, or to receive news and updates, please contact us at: **learnind@empirica.com** or get in touch with us.

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1 Note that "in class" means during lessons while teaching and does not denote a particular location such as a classroom.

2 Base (100%) = all teachers who have used a computer in class in the last 12 months.

3 This section includes some comparisons of the Eurobarometer Flash 94/1001 and 95/102 results from 2001 with those from the LearnInd surveys from 2006. Please bear in mind that the figures are not directly comparable due to the use of slightly different approaches and methodologies.

4 Viherä, M-L, Nurmela, J (2001) "Communication Capability Is an Intrinsic Determinant for Information Age", in Futures, Volume 33, Issue 3-4:245-265.

5 Synthetic indicators: Access: Q14 (2) "Our school is well equipped with computers" and Q14 (3) "The internet connection we have is sufficiently fast ".

Competence: Q11 How confident do you feel... a) using a text processor, b) creating a presentation c) using e-mail, d) downloading and installing software. Threshold: Average of 2.5 or more on a 1-4 confidence scale

Motivation: Q14 (8); disagree to "Using computers in class does not result in significant learning benefits".

For full question wordings refer to questionnaire.

6 http://forum.europa.eu.int/Public/irc/dsis/edtcs/library?l=/public/unesco_collection/programmes_isced97&vm=detailed&sb=Title

7 Densely populated area refers to a set of closely related local units, each one of which having a density greater than 500 inhabitants per km2, and the total population of which being of at least 50 000 inhabitants; Intermediate area refers to a set of closely related

local units that do not pertain to a densely populated area, each one of which having density greater than 100 inhabitants per km2, and where the total population is at least of 50 000 inhabitants or it refers to a set that is adjacent to a highly populated area. Thinly populated area (rural): refers to a set of closely related local units that are not part of a densely populated area, or of an intermediate area. (A set of local areas totalling less than 100 km², not reaching the required density, but entirely enclosed within a densely-populated or intermediate area, is to be considered to form part of that area. If it is enclosed within a densely-populated area and an intermediate area it is considered to form part of the intermediate area).

[8] Source: http://www.uis.unesco.org/profiles/selectCountry_en.aspx (visited 28 March 2006)

[9] Source: http://www.eurydice.org/Documents/struct2/frameset_EN.html (visited: 28 March 2006)

[10] Source: http://europa.eu.int/comm/education/policies/2010/nationalreport_en.html (visited: 9 May 2006)